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ABSTRACT

In learning to read, children must first understand the objectives of that skill: that the visible symbols communicate meaning and code certain features of speech. If a child does not understand this, learning will be impaired. For instance, children who are taught to read a language other than their native language learn better if instructions are given in their native language. Also, when children who were initially taught reading in their native tongue were transferred to reading in a second language, they overtook the children who from the beginning had read only in the second language. This was in spite of the fact that the native tongue beginners had learned to read in two languages instead of in one and had spent less time in learning to read the second language. The explanation for these results was that those who learned to read in their native tongue first could better understand instructions and concepts used by the teachers because they could relate them to their past experience. The cognitive processes in learning to read are of paramount importance and the new frontier for improvement in methods of reading instruction is in the children's thinking, reasoning, conceptualizing, and problem solving about language. (TJ)

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LEARNING TO READ IN DIFFERENT LANGUAGES
-- UNIVERSALS AND SPECIFICS

by John Downing, University of Victoria, Canada

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Research Background

The author of this paper has been conducting two main programmes of research with a common objective -- to understand the task of learning to read from the child's point of view. One avenue of investigation has been "comparative reading" -- the study of the child's

experiences in learning to read in different languages and different cultures. The other line of inquiry has been interviewing and testing young children to discover how they think about reading instruction. This second research approach began with English-speaking children but recently it has been extended to study youngsters in Finland, Germany, Russia and Sweden. However, the full results are not yet available from these other countries.

The Universal Bases of Written Language

Before we consider the child's task of learning to read in different languages, it may be instructive to reflect on the variety of ways in which human beings have created visible language. There are some notable contrasts in the manner in which language is written. For example, Chinese uses a system of logographs in which each visible symbol represents a morpheme or unit of meaning. Japanese uses similar symbols in combination with another type of visible symbol which represents the syllable unit in speech. European languages use alphabets, the visible symbols of which represent the phoneme unit of speech. These alphabets vary in the symbols employed and the coding relationships between letters and sounds. Actually, none of these examples cited is a perfect example of its type. Generally, writing systems employ more than one coding principle, although one system is usually dominant.

Philologists have traced the prehistory and history of the creation of these alternative methods of writing language and it is clear that the inventors and developers of visible signs for language did so on the basis of two sets of ideas. Firstly, they had ideas about the purposes of spoken language. They developed concepts of communication.

They then took the leap forward of realizing that the auditory symbols of speech could be translated into visible signs. When this idea was grasped a second set of ideas developed. A way had to be found to analyse speech so that it could be represented by visible signs in an economic code. Different people had different ideas about how to analyse speech. Thus today we have many different ways to write language. Nevertheless, despite this great variety of writing systems, all visible language rests on these two basic kinds of concepts discovered by the originators of writing:

(1) Functional concepts: the communication purposes of writing.

(2) Featural concepts: the features of spoken language that were to be represented by written signs.

The Universal Tasks of the Literacy Learner

In psychology, reading as a whole is classified as a skill. Several well-known psychologists have reached conclusions about skill development that have not yet been fully applied in the practical business of reading instruction.

Bruner (1) points out that, 'There is a very crucial matter about acquiring a skill -- be it chess, political savvy, biology, or skiing. The goal must be plain; one must have a sense of where one is trying to get to in any given instance of activity. For the exercise of skill is governed by an intention and feedback on the relation between what one has intended and what one has achieved thus far -- 'Knowledge of results'. Without it, the generativeness of skilled operations is lost. What this means in the formal educational setting is far more emphasis on making clear the purpose of every exercise,

every lesson plan, every unit, every term, every education."

Fitts and Posner (9) likewise have indicated the essential need of the skilled learner to understand what he must do and why, in acquiring a skill. They call this characteristic of skill development the "cognitive phase."

Vernon (13) has applied the psychology of skill acquisition to reading instruction itself. She writes (in regard to English): "It would seem that in learning to read it is essential for the child to realize and understand the fundamental generalization that in alphabetic writing all words are represented by combinations of a limited number of visual symbols. Thus it is possible to present a very large vocabulary of spoken words in an economical manner which requires the memorizing of a comparatively small number of printed symbols and their associated sounds. But a thorough grasp of this principle necessitates a fairly advanced stage of conceptual reasoning, since this type of organization differs fundamentally from any previously encountered by children in their normal environment" (italics added). Vernon specifically rejects simple associationistic views of learning to decode. She states: "The employment of reasoning is almost certainly involved in understanding the variable associations between printed and sounded letters. It might appear that certain writers suppose that these associations may be acquired through rote learning. But even if this is possible with very simple letter-phoneme associations, the more complex associations and the correct application of the rules of spelling necessitate intelligent comprehension" (italics added).

In another book, her survey of research on reading failure led her (12) to conclude that "the fundamental and basic characteristic of reading disability appears to be cognitive confusion...", and that "the fundamental trouble appears to be a failure in development of this reasoning process".

If cognitive confusion is the fundamental characteristic of reading failure then the fundamental characteristic of reading success would seem to be cognitive clarity. What exactly must children be cognitively clear about in learning to read? What do they need to understand in reasoning about the tasks they must undertake in reading instruction?

Comparative Reading Research

Before we attempt to answer these two questions let us see what the comparison of learning to read in different languages and cultures tells us about the psychological process of learning to read.

The first large scale comparative reading project was reported five years ago (3). Fourteen countries were compared: Argentina, Denmark, Finland, France, Germany, Great Britain, Hong Kong, India, Israel, Japan, Norway, Sweden, the United States, and the U.S.S.R. Despite the variations in language and educational provisions, it became clear that there was an essential universal psychological situation in learning to read. In every case it is the cognitive processes that are of vital significance. No matter what the language is or how it is written, children everywhere must understand their teachers' reading instruction. They reach this understanding by relating the instruction to their own past experience of speech. This relating of instruction to language experience is achieved by such cognitive processes as problem

solving, concept formation, reasoning and thinking. Of course, there are many other variables that influence the acquisition of reading skill. For example, motivation is of great importance. Nevertheless, the essential formula is that of reasoning about the teacher's instruction on the basis of past experience of spoken communication.

We found many examples of educational situations that illustrate the central significance of cognitive processes in learning to read. Perhaps the most vivid instances are those situations where there is a potential conflict between the language of the child and the language of reading instruction. In several countries we found bilingual situations where the child's preschool experiences of speech were in a different language from the national language. If a school delivered initial reading instruction in the children's mother tongue they made much more rapid progress than in schools where the delivery was in a second language. What is much more significant psychologically is the fact that when children who were initially taught reading in their mother tongue were transferred to reading in the second language, they overtook the children who had started from the beginning on reading the second language. This was despite the fact that the mother tongue beginners had learned to read in two languages instead of one and had spent less time in learning to read the second language. Why were they superior? Our conclusion was that it was because the pupils who learned to read in their mother tongue first could <u>understand</u> their teacher's instruction better. They more readily comprehended the concepts used by the teacher because they could relate them to their own past

experience of language. Later they transferred this superior understanding to apply it to reading in the second language. In contrast, the massive cognitive confusion of the children taught about the linguistic concepts of a second language quite unrelated to their own language experience continued to hamper their development of reading skill in their later school life.

Since the original comparative reading study was published, several more cases of this problem of mismatch between the child's language and the school's language have been investigated and a comparison has been made of the alternative strategies that have been employed in such bilingual situations. This wider survey (4) confirms that children's reasoning processes in learning to read are greatly overloaded when they have to think about reading and writing in a language that is different from their own mother tongue.

It should be emphasized that this example of the problem of bilingual situations is only one example of the evidence from comparative reading research that shows that children's reasoning about reading instruction on the basis of their own language experience is the key factor in the process of learning to read.

Research on Children's Thinking About Reading

The other area of research that we have been working on for more than a decade is concerned with the question -- how do children think about language and literacy? The foundation of this field of investigation was Reid's (11) classic article, "Learning to Think About Reading." She interviewed 12 five-year-olds in Edinburgh, Scotland three times during their first year in school. Reid concluded that they showed a "general lack of any specific expectancies of what

reading was going to be like, of what the activity consisted in, of the purpose and use of it." These beginners also had "a great poverty of linguistic equipment to deal with the new experiences, calling letters 'numbers' and words 'names' ", and so on. We began by replicating Reid's study with some scepticism, but we obtained parallel results that confirmed her conclusions (2). Since then we have conducted a number of investigations with a variety of different research methods. We now know in some detail how children think about language when they first come to school and how their thinking develops in the primary years. All these results are briefly reviewed with bibliographic details in an article that has just been completed (7).

The main purpose of that article just mentioned was to report an interview survey of 310 kindergarten children in Victoria, Canada. These findings are a culmination of the work described in this section of this paper for the Seventh World Congress on Reading. The Victoria survey compared the perceptual and conceptual abilities of these Canadian five-year-olds. We found that the children had no problems with our perceptual test which was very similar to one of the subtests in the Frostig battery. These boys and girls could easily discriminate between visual shapes before they entered first grade. But they were much less mature in their conceptual development. Generally, they were successful in categorizing behaviour as "reading", "not reading," "writing", and "not writing," but they were by no means perfect even in this task. However, their main areas of difficulty were in conceptualizing the purposes of literacy and the features of language that are represented by written symbols.

In recent years several other researchers have made important contributions in this field. Not all of these investigators are in English-speaking countries. For example, Lundberg and Torneus (10) have reported children's confusion over the terms "long word" and "short word" in the Swedish language. We ourselves have just begun a cross-language investigation of children's concepts of literacy. We have developed a new Test of Linguistic Awareness in Reading Readiness which examines children's understanding of the concepts used by teachers in reading instruction. It has been administered to 300 Canadian children and we are collecting parallel samples in other countries. Thus far, we have completed the testing in Finland, and preparations for testing are being made in Germany and Sweden.

Another country where this problem has been studied is the U.S.S.R. We became acquainted with the Soviet research on children's concepts of language through Elkonin's (8) contribution to the comparative reading project. Subsequently visits were made to Elkonin's experimental classes in Moscow, Russia. This led to a search of the Russian literature for the outstanding Soviet publications on this problem. With the aid of a grant from the Canada Council, these articles and chapters from books are being translated into English and will be published soon in a book, Reading Research in the Soviet Union (6). It is clear already that Russian psychologists have been aware of the importance of conceptual development in learning to read for some time. Some of them have been developing methods for helping children to develop these concepts.

Thus, in several different countries with different languages there is a growing awareness among psychologists investigating how children learn to read that the cognitive processes are of paramount importance. The new frontier of growth for improvement in methods of reading instruction is in children's thinking, reasoning, conceptualizing and problem solving about language.

Summing Up

Now we may return to our two questions posed earlier in this paper: "What exactly must children be cognitively clear about in learning to read? What do they need to understand in reasoning about the tasks they must undertake in reading instruction?"

Reading is a skill and, as Bruner has pointed out, practice in learning any skill requires that the learner understands its objectives. These objectives remain the same today as they were hundreds or even thousands of years ago. The literacy learner has to understand the intentions of writers. Why do they make those visible symbols? The answer has two parts: (1) they intend to communicate some meaning; (2) they intend to code certain features of speech. In other words, beginners have to rediscover those same basic functional and featural concepts that led to the invention of the writing system used in their language.

All the work that we have very briefly reviewed in this paper is reported in detail in a book to be published shortly -- Reading and Reasoning (5). These studies have led to the proposal of the "cognitive clarity theory of reading," which also is explained in detail in the same book. It may be stated briefly here as eight postulates:

(1) Writing or print in any language is a visible code for those aspects of speech that were accessible to the linguistic awareness of the creators of that code or writing system; (2) this linguistic awareness of the creators of a writing system included simultaneous awareness of the communicative function of language and certain features of spoken language that are accessible to the speaker-hearer for logical analysis; (3) the learning-to-read process consists in the rediscovery of (a) the functions and (b) the coding rules of the writing system; (4) their rediscovery depends on the learner's linguistic awareness of the same features of communication and language as were accessible to the creators of the writing system; (5) children approach the tasks of reading instruction in a normal state of cognitive confusion about the purposes and technical features of language;(6) under reasonably good conditions, children work themselves out of the initial state of cognitive confusion into increasing cognitive clarity about the functions and features of language; (7) although the initial stage of literacy acquisition is the most vital one, cognitive confusion continues to arise and then, in turn, give way to cognitive clarity throughout the later stages of education as new subskills are added to the student's repertory; (8) the cognitive clarity theory applies to all languages and writing systems. The communication aspect is universal, but the technical coding rules differ from one language to another. For instance, in languages that have an alphabetic writing system, linguistic awareness of the phoneme is more important than awareness of the syllable, whereas in languages with a syllabary (such as Japanese) awareness of the syllable is more important.

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